

## ABSTRACT

NE An expression cassette having a fiber specific promoter driving expression of a gene encoding an elastic and plastic protein based polymer having the repetitive amino acid sequence Gly-Val-Gly-Val-Pro (SEQ. ID. NO. 2), a terminator, and selectable marker genes for transforming plant cells and a transgenic cotton plant having fiber cells stably transformed with the gene encoding the protein based polymer wherein the cotton fiber cells exhibit improved water absorption, temperature transition properties, fiber strength, elasticity, and dye binding capacity.